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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,519	02/10/2004	Anatole Lokshin	4590-169	8690

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EXAMINER	
MULL, FRED H	

ART UNIT	PAPER NUMBER
3662	

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/774,519	LOKSHIN ET AL.	
	Examiner	Art Unit	
	Fred H. Mull	3662	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-31 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of McBurney.

In regard to claim 1, King discloses receiving ephemeris and updated almanac information for a GPS satellite over a datalink (¶ 26); based on the received updated almanac information reconstructing data bits of the GPS signal (¶ 38); based on the current time, synchronizing the reconstructed data bits with the time of reception of a GPS signal from a satellite currently in view (¶ 32, 37); subtracting the reconstructed data bits from the received GPS signal at the synchronized time and coherently integrating the received GPS signal over the time period to the reconstructed data bits to obtain a GPS pseudo-range corresponding measurement (¶ 38); and determining the GPS receiver position using the generated, synchronized pseudo-range measurement and the ephemeris information received over the datalink (65).

King fails to disclose the use of GPS parity algorithms.

McBurney discloses using GPS parity algorithms to reconstructing data bits of the GPS signal from NAV data, as parity bits are a part of the GPS signal (col. 5, lines 23-28; col. 7, lines 10-19; where NAV data is ephemeris and almanac, 234, Fig. 2).

It would have been obvious to include GPS parity algorithms to implement the method of King in order to reproduce the GPS signal, which includes parity bits.

In regard to claim 15, King discloses receiving ephemeris and updated almanac information for a GPS satellite currently in view from a GPS signal transmitted by the GPS satellite at a GPS receiver (¶ 23, where the ephemeris and almanac already in memory would be from and early acquisition of the GPS signal from a GPS satellite); based on the received updated almanac information reconstructing data bits of the GPS signal (¶ 38); based on the current time, synchronizing the reconstructed data bits with the time of reception of a GPS signal from a satellite currently in view (¶ 32, 37); subtracting the reconstructed data bits from the received GPS signal at the synchronized time and coherently integrating the received GPS signal over the time period to the reconstructed data bits to obtain a GPS pseudo-range corresponding measurement (¶ 38); and determining the GPS receiver position using the generated, synchronized pseudo-range measurement and the ephemeris information received over the datalink (¶ 65).

King fails to disclose the use of GPS parity algorithms.

McBurney discloses using GPS parity algorithms to reconstructing data bits of the GPS signal from NAV data, as parity bits are a part of the GPS signal (col. 5, lines 23-28; col. 7, lines 10-19; where NAV data is ephemeris and almanac, 234, Fig. 2).

It would have been obvious to include GPS parity algorithms to implement the method of King in order to reproduce the GPS signal, which includes parity bits.

In regard to claims 22 and 28, King further discloses one or more processors (137, Fig. 2; ¶ 28) and a memory (¶ 23).

In regard to claim 2, King further discloses the datalink is a one-to-many broadcast (¶ 23).

In regard to claim 3, King further discloses the information received over the datalink is formatted for transmission over the datalink (¶ 26).

In regard to claims 4-6, 16-18, 23, and 29 King further discloses the step of reconstructing data bits reconstructs 240 contiguous data bits (¶ 38).

In regard to claims 7-8 and 19-20, King further discloses the subtracting step removes a plurality of bits of data which broadcast over a plurality of seconds of data from the received GPS signal (¶ 38).

In regard to claims 9 and 21, King further discloses the step of coherently integrating is performed for more than one satellite (¶ 21).

In regard to claims 10-13 and 24-27, King further discloses the received ephemeris and almanac information is received from a periodic broadcast (¶ 23).

In regard to claim 14, King further discloses storing the reconstructed data bits of the GPS signal and subsequent to storing the reconstructed data bits, performing the integrating, and determining steps using the stored synchronizing, subtracting, reconstructed data bits (¶ 38).

2. Claims 1, 3, 6-8, 14, 22-23, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akopian in view of McBurney.

In regard to claim 1, Akopian discloses receiving ephemeris and updated almanac information for a GPS satellite over a datalink (col. 3, lines 38-59); based on the received updated almanac information reconstructing data bits of the GPS signal (col. 3, lines 38-49); based on the current time, synchronizing the reconstructed data bits with the time of reception of a GPS signal from a satellite currently in view (col. 7, lines 8-35); subtracting the reconstructed data bits from the received GPS signal at the synchronized time and coherently integrating the received GPS signal over the time period to the reconstructed data bits to obtain a GPS pseudo-range corresponding measurement and determining the GPS receiver position using the generated, synchronized pseudo-range measurement and the ephemeris information received over the datalink (col. 3, line 50-col. 4, line 13).

Akopian fails to disclose the use of GPS parity algorithms.

McBurney discloses using GPS parity algorithms to reconstructing data bits of the GPS signal from NAV data, as parity bits are a part of the GPS signal (col. 5, lines 23-28; col. 7, lines 10-19; where NAV data is ephemeris and almanac, 234, Fig. 2).

It would have been obvious to include GPS parity algorithms to implement the method of Akopian in order to reproduce the GPS signal, which includes parity bits.

In regard to claim 22, Akopian further discloses one or more processors and a memory (col. 3, lines 15-37, where a processor is necessary to do the signal processing, and a memory is necessary to store the data during the processing steps).

In regard to claim 3, Akopian further discloses the information received over the datalink is formatted for transmission over the datalink (col. 6, lines 28-34).

In regard to claims 4-6 and 23 Akopian further discloses the step of reconstructing data bits reconstructs 240 contiguous data bits (col. 3, lines 50-59).

In regard to claims 7-8, Akopian further discloses the subtracting step removes a plurality of bits of data which broadcast over a plurality of seconds of data from the received GPS signal (col. 3, line 50-col. 4, line 13).

In regard to claim 14, Akopian further discloses storing the reconstructed data bits of the GPS signal and subsequent to storing the reconstructed data bits, performing the integrating, and determining steps using the stored synchronizing, subtracting, reconstructed data bits (col. 3, line 50-col. 4, line 13).

In regard to claim 30, Akopian discloses a processor for receiving and transmitting data (col. 3, lines 15-37, where a processor is necessary to do the signal processing) and a memory (col. 3, lines 15-37, where a memory is necessary to store the data during the processing steps) coupled to said processor, said memory having stored therein received ephemeris information and updated almanac information (col. 3,

lines 38-59) for a GPS satellite from a GPS signal transmitted by the GPS satellite and sequences of instructions which, when executed by said processor, cause said processor to determine if a strong GPS signal is received or if a weak or no GPS signal is received, if a strong GPS signal is received said processor generates a fix and updates time, position, ephemeris, and almanac information, and if a weak or no GPS signal is received, said processor reads the stored received ephemeris information, updated almanac information, and stored received time and position information to generate a fix (col. 3, line 15 to col. 4, line 13).

In regard to claim 31, as the receiver of Akopian continues to determine its position, it is following the procedure outlined above, and so in the determining step, it will determine if the signal is strong or weak, and thus determine whether the signal strength has changed.

3. The examiner also finds the following reference(s) relevant:

Tsui, which teaches that the GPS signal includes parity bits (p. 88-93).

Loomis, which teaches reduction in time to first fix using aiding ephemeris and almanac transmitted periodically.

Applicant is encouraged to consider these documents in formulating their response (if one is required) to this action, in order to expedite prosecution of this application.

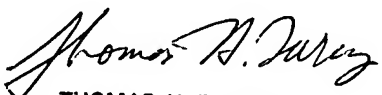
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 703-305-1250. The examiner can normally be reached on M-F 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H Tarcza can be reached on 703-360-4171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred H. Mull
Examiner
Art Unit 3662

fhm



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